

What is Claimed Is:

1. A network-enabled user interface device, the device including:  
a display screen configured for displaying display elements;  
a user input interface configured for supplying user inputs;  
an interface controller configured for receiving application-based commands for at least one  
5 of first operations, second operations, and third operations, the interface controller configured for  
causing the display screen to display the display elements based on the first operations, configuring  
the user input interface for selected input operations based on the second operations, and generating  
application-based responses based on the supplied user inputs and the third operations; and  
an application controller configured for communication with executable application  
10 operations having generated the application-based commands and selectively transferring the  
application-based responses to selected ones of the executable application operations, the application  
controller including a network interface configured for receiving the application-based commands  
and outputting selected ones of the application-based responses via an open protocol network.

2. The device of claim 1, wherein the interface controller includes:  
a display abstraction interface configured for generating display-specific images for display  
of the respective display elements by the display screen; and  
an input abstraction interface configured for generating hardware-specific commands for  
15 configuration of the user input interface for the respective selected input operations based on input  
elements selected according to the second commands.

3. The device of claim 2, wherein the interface controller further includes a message  
controller configured for receiving the application-based commands as first text strings and  
generating the application-based responses as second text strings based on the supplied user inputs  
and the third operations, the message controller parsing the first text strings for retrieval of the  
application-based commands.

4. The device of claim 3, wherein the interface controller further includes:

an extensible markup language (XML) module configured for generating first identifiers specifying the display elements to be displayed and second identifiers specifying the input operations to be performed by the user input interface, based on parsing selected XML documents based on the application-based commands, the selected XML documents configured for specifying the first operations, the second operations and the third operations; and

a graphic user interface (GUI) elements table configured for storing available interface elements including the display elements and the input elements, the GUI elements table configured for outputting the identified display elements and the identified input elements specified by the first and second identifiers to the display abstraction interface and the input abstraction interface, respectively.

5. The device of claim 4, wherein the interface controller further includes a messaging interface configured for receiving event-based messages specifying event-based information to be provided to the user, the event-based information including any one of text information, audible information, text-based information, video information, and graphical information.

6. The device of claim 4, wherein the stored available interface elements includes menu elements, input elements, text elements, graphic elements, soft key elements, hardware light elements, and audio speaker elements.

7. The device of claim 1, further comprising a locally-executable resource configured for generating a first group of the application-based commands, the application controller configured for identifying a first of the application-based responses as corresponding to the locally-executable resource and in response outputting the first of the application-based responses to the locally-executable resource.

8. The device of claim 7, wherein the open protocol network is an Internet Protocol network.

9. The device of claim 1, further comprising a telephony portion configured for providing Voice over IP based communications via the open protocol network concurrent with the display of the display elements and the selected input operations.

10. A method of controlling a display screen and a user input interface of a network-enabled user interface device configured for network-based communications via an open protocol network, the method comprising:

receiving application-based commands for execution of at least one of first operations, second operations, and third operations from at least one of a plurality of executable application operations, at least a first of the executable application operations in communication with the network-enabled user interface device via the open protocol network;

first generating, by an interface controller, selected display elements based on the first operations and selected input operations elements based on the second operations;

causing the display screen to display the selected display elements and the user input interface to execute the selected input operations elements; and

second generating application-based responses based on supplied user inputs to the user input interface based on the selected input operations elements, and based on the third operations.

11. The method of claim 10, wherein:

the receiving step includes receiving multiple groups of application-based commands via the open protocol network from respective servers executing the respective executable application operations; and

the second generating step includes outputting the application-based responses to the respective servers via the open protocol network.

12. The method of claim 10, wherein the interface controller includes a display abstraction interface configured for generating display-specific images and an input abstraction interface configured for generating hardware-specific commands for configuration of the user input interface, the causing step including:

5       generating selected display-specific images for display of the respective display elements by the display screen; and

          generating selected hardware-specific commands for configuration of the user input interface for the respective selected input operations based on input elements selected according to the second commands.

13. The method of claim 12, wherein:

          the interface controller further includes a message controller configured for receiving the application-based commands as first text strings;

          the receiving step includes parsing the first text strings for retrieval of the application-based commands; and

          the second generating step includes generating the application-based responses as second text strings based on the supplied user inputs and the third commands.

14. The method of claim 13, wherein the interface controller further includes an extensible markup language (XML) module and a graphic user interface (GUI) elements table, the first generating step including:

          identifying by the XML module the display elements to be displayed and the input operations to be performed by the user input interface, based on parsing selected XML documents based on the application-based commands, the selected XML documents configured for specifying the first operations, the second operation and the third operations; and

          outputting from the GUI elements table the identified display elements and the identified input elements specified by the XML module to the display abstraction interface and the input abstraction interface, respectively.

15. The method of claim 14, wherein the first generating step further includes generating event-based information to be provided to the user, including any one of text information, audible information, text-based information, video information, and graphical information, based on receiving an event-based message specifying the event-based information to be provided to the user.

16. The method of claim 14, wherein the stored available interface elements include menu elements, input elements, text elements, graphic elements, soft key elements, hardware light elements, and audio speaker elements.

17. The method of claim 10, wherein the receiving step includes receiving a first group of the application-based commands via the open protocol network from respective servers executing the respective executable application operations, and receiving a second group of the application-based commands from a locally-executable resource, the second generating step including outputting the application-based responses to the respective identified executable application operations.

18. The method of claim 17, wherein the open protocol network is an Internet Protocol network.

19. The method of claim 10, further comprising providing voice over IP based communications via the open protocol network concurrent with the display of the display elements and the selected input operations.

20. A computer readable medium having stored thereon sequences of instructions for controlling a display screen and a user input interface of a network-enabled user interface device, configured for network-based communications via an open protocol network, the sequences of instructions including instructions for performing the steps of:

receiving application-based commands for execution of at least one of first operations, second operations, and third commands from at least one of a plurality of executable application

operations, at least a first of the executable application operations in communication with the network-enabled user interface device via the open protocol network;

first generating, by an interface controller, selected display elements based on the first operations and selected input operations elements based on the second operations;

causing the display screen to display the selected display elements and the user input interface to execute the selected input operations elements; and

second generating application-based responses based on supplied user inputs to the user input interface based on the selected input operations elements, and based on the third operations.

21. The medium of claim 20, wherein:

the receiving step includes receiving multiple groups of application-based commands via the open protocol network from respective servers executing the respective executable application operations; and

the second generating step includes outputting the application-based responses to the respective servers via the open protocol network.

22. The medium of claim 20, wherein the interface controller includes a display abstraction interface configured for generating display-specific images and an input abstraction interface configured for generating hardware-specific commands for configuration of the user input interface, the causing step including:

generating selected display-specific images for display of the respective display elements by the display screen; and

generating selected hardware-specific commands for configuration of the user input interface for the respective selected input operations based on input elements selected according to the second commands.

23. The medium of claim 22, wherein:

the interface controller further includes a message controller configured for receiving the application-based commands as first text strings;

the receiving step includes parsing the first text strings for retrieval of the application-based commands; and

the second generating step includes generating the application-based responses as second text strings based on the supplied user inputs and the third commands.

24. The medium of claim 23, wherein the interface controller further includes an extensible markup language (XML) module and a graphic user interface (GUI) elements table, the first generating step including:

identifying by the XML module the display elements to be displayed and the input operations to be performed by the user input interface, based on parsing selected XML documents based on the application-based commands, the selected XML documents configured for specifying the first operations, the second operations, and the third operations; and

outputting from the GUI elements table the identified display elements and the identified input elements specified by the XML module to the display abstraction interface and the input abstraction interface, respectively.

25. The medium of claim 24, wherein the first generating step further includes generating event-based information to be provided to the user, including any one of text information, audible information, text-based information, video information, and graphical information, based on receiving an event-based message specifying the event-based information to be provided to the user.

26. The medium of claim 24, wherein the stored available interface elements include menu elements, input elements, text elements, graphic elements, soft key elements, hardware light elements, and audio speaker elements.

27. The medium of claim 20, wherein the receiving step includes receiving a first group of the application-based commands via the open protocol network from respective servers executing the respective executable application operations, and receiving a second group of the application-based commands from a locally-executable resource, the second generating step including outputting the application-based responses to the respective identified executable application operations.

28. The medium of claim 27, wherein the open protocol network is an Internet Protocol network.

29. The medium of claim 20, further comprising instructions for performing the step of providing voice over IP based communications via the open protocol network concurrent with the display of the display elements and the selected input operations.

30. A network-enabled user interface device having a display screen and a user input interface and configured for network-based communications via an open protocol network, the device further comprising:

means for receiving application-based commands for execution of at least one of first operations, second operations, and third operations from at least one of a plurality of executable application operations, at least a first of the executable application operations in communication with the network-enabled user interface device via the open protocol network;

means for first generating, by an interface controller, selected display elements based on the first operations and selected input operations elements based on the second operations;

means for causing the display screen to display the selected display elements and the user input interface to execute the selected input operations elements; and

means for second generating application-based responses based on supplied user inputs to the user input interface based on the selected input operations elements, and based on the third operations.



31. The device of claim 30, wherein:

the receiving means is configured for receiving multiple groups of application-based commands via the open protocol network from respective servers executing the respective executable application operations; and

the second generating means is configured for outputting the application-based responses to the respective servers via the open protocol network.

32. The device of claim 30, wherein the interface controller includes a display abstraction interface configured for generating display-specific images and an input abstraction interface configured for generating hardware-specific commands for configuration of the user input interface, the causing means configured for:

generating selected display-specific images for display of the respective display elements by the display screen; and

generating selected hardware-specific commands for configuration of the user input interface for the respective selected input operations based on input elements selected according to the second commands.

33. The device of claim 32, wherein:

the interface controller further includes a message controller configured for receiving the application-based commands as first text strings;

the receiving means is configured for parsing the first text strings for retrieval of the application-based commands; and

the second generating means is configured for generating the application-based responses as second text strings based on the supplied user inputs and the third commands.

34. The device of claim 33, wherein the interface controller further includes an extensible markup language (XML) module and a graphic user interface (GUI) elements table, the first generating means configured for:

identifying by the XML module the display elements to be displayed and the input operations to be performed by the user input interface, based on parsing selected XML documents based on the application-based commands, the selected XML documents configured for specifying the first operations, the second operations and the third operations; and

outputting from the GUI elements table the identified display elements and the identified input elements specified by the XML module to the display abstraction interface and the input abstraction interface, respectively.

35. The device of claim 34, wherein the first generating means is configured for generating event-based information to be provided to the user, including any one of text information, audible information, text-based information, video information, and graphical information, based on receiving an event-based message specifying the event-based information to be provided to the user.

36. The device of claim 34, wherein the stored available interface elements include menu elements, input elements, text elements, graphic elements, soft key elements, hardware light elements, and audio speaker elements.

37. The device of claim 30, wherein the receiving means is configured for receiving a first group of the application-based commands via the open protocol network from respective servers executing the respective executable application operations, and receiving a second group of the application-based commands from a locally-executable resource, the second generating means configured for outputting the application-based responses to the respective identified executable application operations.

38. The device of claim 37, wherein the open protocol network is an Internet Protocol network.

